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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,181	01/29/2002	Shigeo Fujita	Q67080	2911

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EXAMINER

SANTIAGO, MARICELI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 07/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Age

Office Action Summary

Applicant(s)

10/048,181

Applicant(s)

FUJITA, SHIGEO

Examiner

Mariceli Santiago

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6-9 and 15-17 is/are rejected.
- 7) ☒ Claim(s) 2-5,10-14 and 18-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on January 29, 2002, has been entered and acknowledged by the Examiner.

Specification

The disclosure is objected to because of the following informalities:

The specification fails to provide sections headings. The text of the specification sections, except for the drawings, should be preceded by a section heading in uppercase and without underlining or bold type. See MPEP 608.01(a). Appropriate correction is required.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).

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- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 9 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Schubert et al. (DD 278 449 A1).

Regarding claims 1 and 16, Schubert discloses an apparatus adapted to perform a method of making a spark plug comprising a center electrode disposed in a bore formed in a ceramic insulator, a metallic shell fitting outside the ceramic insulator and a ground electrode forming a spark gap with the center electrode, the method comprising steps of providing a metal strip (9) which extends from an end of the metal shell, the metal strip being for forming the ground electrode, positioning a spacer (5) above the firing end of the center electrode, preliminary bending the metal strip (9) toward the spacer so as to form an arc portion in the metal strip, and then precisely forming a gap-distance between the metal strip and the firing end of the center electrode by applying a force to the metal strip (Page 2, lines 1-29).

Regarding claim 6, Schubert discloses a method wherein a clearance between the spacer and the firing end is maintained during the step of bending the metal strip so as to protect the firing end of the center electrode (Page 2, lines 1-29).

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Regarding claim 9, Schubert discloses a method wherein the spacer (5) has a rounded portion toward which the metal strip (9) is bent by a punch, in the preliminary.

Regarding claim 15, Schubert discloses a method wherein the arc portion to be formed in the metal strip by positioning the spacer (5) is located at substantially the same level as the firing end of the center electrode (see Fig. 1).

Regarding claim 17, Schubert discloses an apparatus for the method of making a spark plug comprising a center electrode disposed in a bore formed in a ceramic insulator, a metallic shell fitting outside the ceramic insulator and a ground electrode forming a spark gap with the center electrode, the method comprising steps of providing a metal strip (9) which extends from an end of the metal shell, the metal strip being for forming the ground electrode, positioning a spacer (5) above the firing end of the center electrode, preliminarily bending the metal strip (9) toward the spacer so as to form an arc portion in the metal strip, and then precisely forming a gap-distance between the metal strip and the firing end of the center electrode by applying a force to the metal strip (Page 2, lines 1-29).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schubert et al. (DD 278 449 A1) in view of Osamura et al. (US 5,977,695).

Regarding claims 7 and 8, Schubert discloses the claimed invention except for the limitations of the firing end of the center electrode is made of a tip having a diameter in the

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range of from 0.3 to 1 mm and the tip comprising a metal selected from the group of Pt, Ir, Rh, Pd, Re, Os, Ru or an alloy. In the same field of endeavor Osamura discloses a spark plug comprising a firing end tip of the center electrode being made of an Ir alloy material and having a diameter of 0.7 mm to ensure both heat extraction from firing tip and spark quench for the center electrode and the ground electrode (Column 5, lines 19-29). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the firing end of the center electrode being made of a tip having a diameter in the range of from 0.3 to 1 mm and the tip comprising a metal selected from the group of Pt, Ir, Rh, Pd, Re, Os, Ru or an alloy, in order to ensure both heat extraction from firing tip and spark quench for the center electrode and the ground electrode.

Other Prior Art Cited

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Allowable Subject Matter

Claims 2-5, 10-14 and 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Contact Information


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (703) 305-1083. The examiner can normally be reached on Monday-Friday from 7:00 AM to 3:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7382. Additionally, the following fax phone numbers can be used during the prosecution of this application (703) 872-9318 (for response before a Final Action) and (703) 872-9319 (for response after a Final Action).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mariceli Santiago
Patent Examiner
Art Unit 2879


KENNETH J. RAMSEY
PRIMARY EXAMINER